

## 1 Objectives

- Be able to outline the steps necessary to write an interpreter.
- Use a simple LL grammar to parse a lambda-calculus like language.
- Know how to write a type declaration to represent the parts of the language.
- Be able to use substitution to implement variable assignment.

## 2 Semantics

## 3 Type Definition

## 4 Substitute

$$\begin{array}{ll} n[M/x] & \rightarrow n \\ x[M/x] & \rightarrow M \\ y[M/x] & \rightarrow y \\ (AB)[M/x] & \rightarrow (A[M/x]B[M/x]) \\ (\lambda x.A)[M/x] & \rightarrow (\lambda x.A) \\ (\lambda y.A)[M/x] & \rightarrow (\lambda y.A[M/x]) \end{array}$$